

a certain rank in the Worora tribe to have their 'hand shadows' perpetuated upon the walls of caves in which the bones of their ancestors are reposed, because the spirits of the dead are thus supposed to be apprised of any visits which have been made to their last earthly resting places. It is beyond dispute that the natives possess the faculty of being able to recognise the hand-marks of their relatives and tribesmen, even though they may not have been present when they were made."

However, whatever their significance, it seems worthwhile that all such occurrences should be put on record before vandalism of the type already recorded at Gwambyine and Hyden destroys them for all time.

NOTES ON THE GENUS *IDIOSOMA*, A SUPPOSEDLY RARE WESTERN AUSTRALIAN TRAP-DOOR SPIDER

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In 1870 Cambridge described a male specimen of *Idiosoma sigillatum* collected in 1864 from the Swan River, under the name *Idiops sigillatus*. The following year Ausserer proposed for this spider a new genus, *Idiosoma*. No further specimens were collected until 1897 when Pocock described a female of the same species. Later literature on local trap-door spiders intimate the rarity of this spider and report that after 1897 no further specimens were collected. Both described specimens are in the British Museum of Natural History. Prior to this report the genus was thought to be monotypic. The erection of two new species is considered warranted after an examination of Mygalomorph material in the W.A. Museum and additional specimens collected in the field by the author.

In this paper the generic characters are briefly restated, the two new species are described, and the main diagnostic features of *I. sigillatum* given. The variability of *I. hirsutum* sp. nov., *I. nigrum* sp. nov., and *I. sigillatum*, as deduced from a close examination of all available specimens and comparison with Cambridge's and Pocock's original descriptions is fully discussed in a monograph of W.A. Mygalomorphs at present in preparation.

Genus *IDIOSOMA* Ausserer, 1871.

Idiops sigillatus, O.P. Cambridge, P.Z.S., 1870, p. 105, pl. viii, fig. 2.

Acanthodon sigillatum, Simon, Hist. Nat. des Araign. i., 1892, p. 91.

Idiops sigillatus, Rainbow, Rec. Austr. Mus., iv., 1, p. 7.

Acanthodon sigillatum, Rainbow, op. cit.

Generic Characters: *Carapace*, longer than wide, anteriorly and posteriorly truncate, sides subparallel but sinuous; caput only slightly elevated. *Fovea*, deep, procurved. *Clypeus*, membranous

with bristles. *Eyes*, in three rows of 2, 2, 4; ALE close together on edge of earapaeae, AME. directly behind; PLE and PME in a transverse row. Group wider than long. *Chelicerae*, with teeth on both margins of furrow and an intermediate basal group. Rastellum prominent. *Maxillae*, with anterior seopula; bristles and spinules over ventral surface and euspules on inner margin (spinules and cuspules may be absent in male). *Labium*, depressed; free but closely approximated to sternum; no euspules or spines. *Sternum*, longer than wide; three pairs of round sigilla; one pair oval sigilla behind labium. *Palps*, tarsus with seopula; female palp with claw. *Legs*, weakly spined; two anterior pairs of tarsi and metatarsi with scopula. Female upper elaws with several unequal teeth, male with many teeth (six to twelve), in a single row. *Abdomen*, dorsally eoriaeaeous, heavily selcrotised (not so heavily in male), distinetly eorrugated in female, less so in male, the grooves and ridges running longitudinally and in some species transversely at the posterior, spinose. Ventrally eorrugated only at the edges. Anteriorly abdomen elevated high above level of cephalothorax. Posteriorly abdomen is truneate but not as much as in *Cyclocosmia* and *Chorizops*. Two pairs of large conspieuous posterior sigilla, which, as Cambridge described them are "like seals" (Cambridge, 1870, p. 106). Two pairs of spinnerets.

Idiosoma sigillatum Cambridge.

Synonymy as for genus, additional references.

Idiosoma sigillatum, Ausserer, Verh. z-b. Vien, 1871, p. 150.

Idiosoma sigillatum, Koch, Die Araehn. Austral. 1871, I, p. 461 (German translation of Cambridge's description).

Idiosoma sigillatum, Pocock, Ann. Mag. Nat. Hist., xix (6), 1897, p. 109.

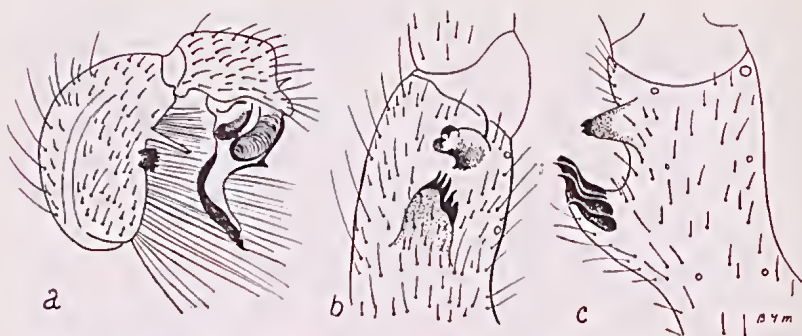
Idiosoma sigillatum, Simon, Hist. Nat. des Araign., Suppl. Gen. 1897, p. 901-2.

Idiosoma sigillatum, Hogg, P.Z.S., 1901, p. 230.

Idiosoma sigillatum, Rainbow, Ree. Austr. Mus., 1911, vol. ix, p. 110-1 (Census of Australian Spiders).

♀ Easily recognised by the dorsally eoriaeaeous eorrugated abdomen; ridges brown, grooves yellow; uniformly covered with small pointed spines; along tops of ridges large, stout, black, blunt-pointed spines and oeeasional bristles (text fig. 2a). Dorsally the corrugations are longitudinal, posteriorly transverse thus passing between and around sigilla. Venter yellow, not eoriaeaeous, transversely wrinkled, with bristles and hairs. Cephalothorax and appendages reddish-brown. Other characters as for genus. (Variability of dimensions and ratios, cheliceral teeth, tarsal elaws, spines and so on discussed elsewhere—as mentioned).

♂ Cephalothorax and abdomen smaller than female, legs longer and thinner; brown; abdomen with several longitudinal eoriaeaeous eorrugations, not nearly as pronounced as in female; long black pointed spines along tops of ridges; four conspieuous sigilla. Legs covered with spines, few hairs and bristles (measurements and ratios etc. given elsewhere).



Text figure 1.—*Idiosoma sigillatum* ♂. a, Tibia and tarsus of right palp, retrolateral; b, Tibia of first left leg, prolateral; c, Id., ventral.

Idiosoma hirsutum sp. nov.

♀ (measurements and ratios given are for the holotype). Carapace 14.00 mm. long, 9.75 mm. wide; chelicerae 5.00 mm.; abdomen 17.50 mm. long, 14.00 mm. wide. Cephalothorax and appendages reddish-brown. Anterior of carapace glabrous, posterior hairy. *Eyes*, ratio of ALE : AME : PLE : PME = 10 : 6 : 11 : 5. ALE more than half but less than their diameter apart; AME more than their diameter apart. Length: width of eye group = 2.10 : 3.25. *Chelicerae*, inner margin of furrow with 7 to 11 (usually 8) teeth, outer with 6 to 9 (usually 6), intermediate with 5 to 9 (usually 8), (numbers ascertained from examination of four specimens). *Maxillae* and *labium* as for genus. *Sternum*, as for genus; length: width = 29 : 20 (7.25 mm. : 5.00 mm.). *Palp* claw with 1 to 3 teeth, usually 3.

<i>Legs</i>	4	1	2	3
	1.91	1.80	1.58	1.43

	F.	P.	T.	MT	T	Total
I	8.50	5.00	4.75	4.00	3.00	25.25 mm.
II	7.00	5.00	4.00	3.50	2.75	22.25 mm.
III	6.00	4.50	3.50	3.25	2.75	20.00 mm.
IV	8.00	5.50	5.00	4.75	3.50	26.75 mm.
Palp	7.00	4.00	4.75		4.50	20.25 mm.

Width of patella I at "knee", 1.85 mm. Tibial index, 19.47. Width of patella IV at "knee", 2.15 mm. Tibial index, 20.48. Spination variable but essentially like *I. sigillatum* (see Pocock 1897, p. 111), does not seem to be specifically significant. Tarsal claws with 1 to 3 teeth, usually 3 (deduced from examination of four specimens). Abdomen dorsally with prominent longitudinal ridges and grooves, posteriorly they are transverse and extend between sigilla, thus whole of dorsum is corrugated. Tops of ridges brown, grooves yellow, colour demarcations form a pronounced line, whole

of dorsum uniformly covered with small pointed spines; long, fine hairs along tops of ridges. Venter yellow, not sclerotised except at edges; transverse wrinkles; hairy. Four spinnerets.

Type loc.: Victoria Park. W.A. Museum 29-1060.

Loc. of paratype: South Perth. W.A. Museum 1914-1069.

Idiosoma nigrum sp. nov.

♀ (Measurements and ratios given are those of the holotype). Carapace 10.00 mm. long, 7.00 mm. wide; chelicerae 4.00 mm.; abdomen 13.25 mm. long, 10.50 mm. wide. Cephalothorax and appendages dark greyish-brown (some specimens reddish). Carapace glabrous. *Eyes*, ratio ALE : AME : PLE : PME = 7 : 5 : 11 : 4. ALE about half their diameter apart; AME more than their diameter apart. Length: width of eye group = 1.65 : 2.60. *Chelicerae*, 6 to 8 teeth in inner row, 5 to 6 in outer row, 6 to 9 in intermediate group. *Maxillae* and *labium* as for genus. *Sternum* as for genus; length: width = 24 : 19 (6.00 mm. : 4.75 mm.). *Palp*, claw with 3 teeth.

Legs	4	1	2	3		
	1.93	1.85	1.65	1.48		
	F.	P.	T.	MT	T	Total
I	6.00	4.00	4.00	2.50	2.00	18.50 mm.
II	5.25	3.75	3.25	2.25	2.00	16.50 mm.
III	4.00	3.00	2.75	3.00	2.00	14.75 mm.
IV	6.00	4.00	3.75	4.00	2.00	19.75 mm.
Palp	5.00	3.00	3.00		3.50	14.00 mm.

Width of patella I at "knee", 1.25 mm. Tibial index, 15.63. Width of patella IV at "knee", 1.50 mm. Tibial index, 19.35. Spination variable, not essentially different from other two species. Tarsal claws with 2 to 5 teeth, usually 3. *Abdomen*, dorsally black, anterior yellowish-grey; heavily sclerotised, more so than other two species — whereas former are leathery this species is hard and quite inflexible. Anteriorly less sclerotised. Sclerotisation comprised of angular plates, which anteriorly are wide apart and further back are adjacent and welded together. Longitudinal corrugations; unlike *I. sigillatum* and *I. hirsutum* there are no transverse corrugations, thus the area between sigilla is quite flat. Ridges and grooves with short, stumpy, tubercular, black spines. The anterior and lateral spines rather like the small spines of the other two species, except for the colour; the larger spines however, are of a different shape (see text fig. 2c.), and relatively smaller than those of *I. sigillatum*. Very few bristles on dorsum; many bristles and hairs on dorsal anterior part and around edge of venter, also long, thin pointed spines behind spinnerets. Venter yellowish, not sclerotised except at edges, transversely wrinkled, with hairs and bristles.

Type loc.: The Wongan Hills.

Loc. of paratype: The Wongan Hills.

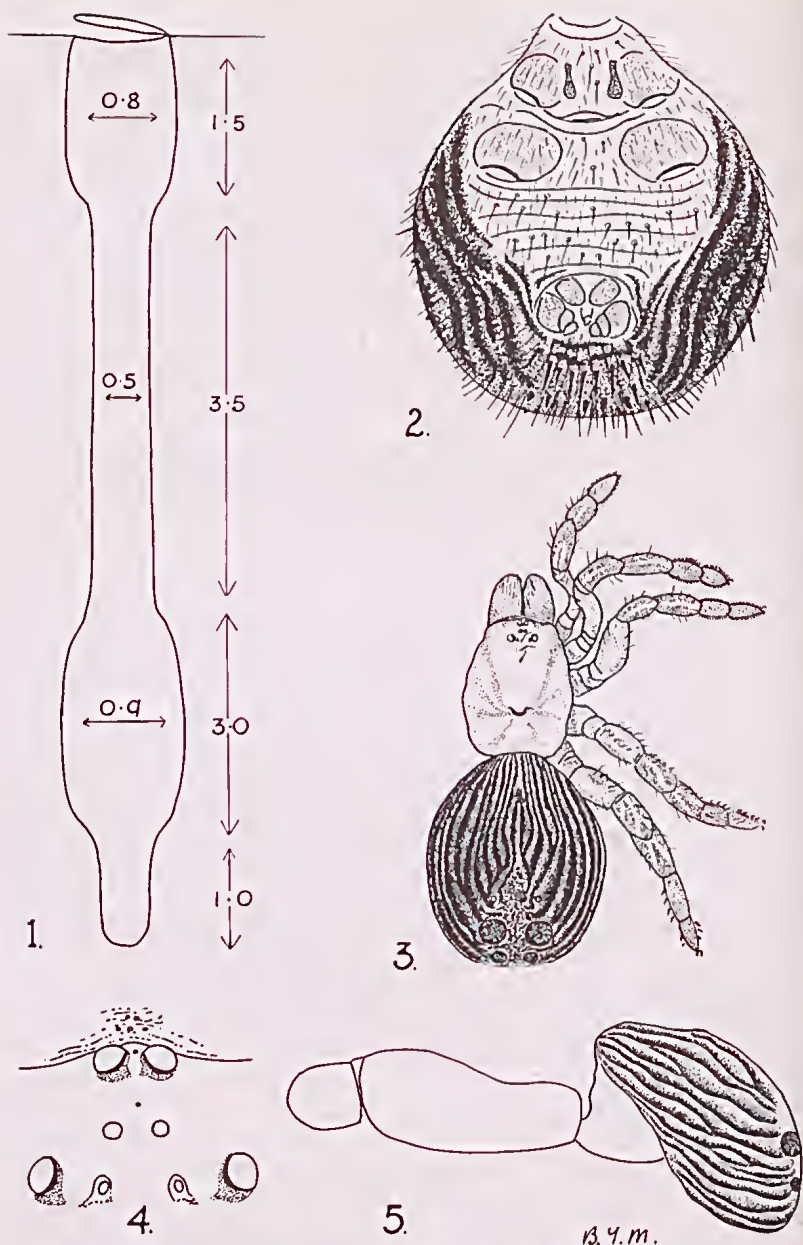


Plate 1.—*Idiosoma nigrum* sp. nov., ♀. 1. Longitudinal section of nest, measurements in inches. 2. Ventral view of abdomen. 3. Dorsal view of spider. 4. Eyes. 5. Profile of spider.

N.B.—Drawings not to same scale.

NATURAL HISTORY

Locality of specimens examined: *Idiosoma sigillatum*, ♂ Claremont, ♂ West Midland, ♀ Nedlands, ♀ Cannington, ♀ Bayswater, ♀ Mt. Lawley, ♀ Bibra Lake, ♀ Swanbourne, ♀ Wembley, ♀ Forrestdale. *I. hirsutum*, ♀ South Perth, ♀ Midland Junction, 2 ♀ ♀ Victoria Park. *I. nigrum*, ♀ Northam, ♀ Mt. Dick, ♀ Goomalling, ♀ Bolgart, 6 ♀ ♀ Wongan Hills, 5 immatures Wongan Hills.

There are no natural history records of *I. sigillatum* or *I. hirsutum*. Of the sixteen specimens of *I. nigrum* fifteen were dug from their nests in the ground. The specimen from Northam was presented to the author by Mr. C. G. Jessup to whom it had been given by someone who did not mention how the specimen had been obtained. The Mount Dick specimens were obtained by scraping eucalypt leaf litter off the ground with a spade, thus removing the lids and exposing the tubes. The tube of the immature specimen was just less than 4 inches deep and contained no silk lining. The mature specimen's nest was lined throughout with white silk and showed the characteristic structure illustrated in Plate I, figure 1. These specimens were found within a few yards of one another in rich red soil on the eastern side of Mt. Dick where the hill flattens out.

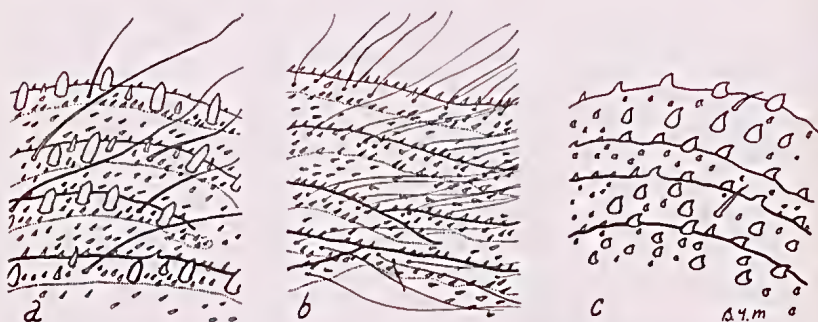
The nest of the specimen from Goomalling was exposed by the same technique under eucalyptus leaf litter. It was in sandy soil overlying and adjacent to red loam in the bush reserve to the north of the town.

In rich red loam beneath a eucalypt tree by the roadside about a mile south of Bolgart another specimen was dug from its hole. The measurements for the nest illustrated (Plate I, fig. 1) are of this spider's tube.

Two of the Wongan Hills specimens (adults), were discovered in red soil within a few inches of the base of a mallee growing alongside the Piawaning road as it passes through the Wongan Hills to the north-west of the town. The closed lids of these two tubes were observed without disturbing the debris. Attached to the lids were pieces of bark, leaves and twigs but they were not covered with loose litter. The remaining nine specimens from Wongan Hills were found on a flat shelf along one of the valleys in the Wongan Hills. All specimens were in an area about one yard square and several nests were no more than a few inches apart. Again the soil was deep red (weathered dolerite) and sparsely covered with *Casuarina* and *Eucalyptus* leaves. To the lids and lips of all the tubes were attached twigs, leaves, pieces of bark and *Eucalyptus* seed capsules, in some cases the twigs attached to the rims of the tubes were 4 inches long and spread out in a semi-circle.

The structure of all fifteen nests agreed essentially with that figured and all were lined with white silk. Of the twelve lids observed (some were lost in the slicing operations), all were of the wafer type, thin and easily bent, the edges sitting on top of the rim and overlapping it a little; all had debris attached to the upper surface. None of the specimens elung to the lid when opened, all were in the lower swollen part of the tube. Some specimens were upside down in their burrows, that is with the posterior truncation of the abdomen upwards, whereas other specimens had the anterior end facing up the tube, with their fangs opened ready to strike.

All nests had a plug of ant remains in the bottom of their tubes. Among the tubes excavated in the Wongan Hills was one which contained no spider but the pupal case of an Hymenopterous parasite. This has not yet emerged.



Text figure 2.—Abdominal ridges showing spination. a, *Idiosoma sigillatum*; b, *I. hirsutum* sp. nov.; c, *I. nigrum* sp. nov.

DISCUSSION

Females of the three known species of *Idiosoma* can be simply identified from the following table:—

Eyes arranged in three rows of 2, 2, 4; abdomen spinose, sclerotised and corrugated *Idiosoma*

1a Abdomen dorsally black (for the type of spination see text fig. 2c) *I. nigrum* sp. nov.

1b Abdomen dorsally with brown ridges and yellow grooves 2

2a Dorsum of abdomen uniformly covered with small pointed spines; large spines and occasional bristles along tops of ridges *I. sigillatum*

2b Dorsum of abdomen uniformly covered with small pointed spines; no large spines and bristles but numerous long hairs along tops of ridges *I. hirsutum* sp. nov.

Of the thirteen specimens of *I. sigillatum* and *I. hirsutum* examined there were no intergrading forms in regard to species characteristics. Although they both occur scattered over the same broad locality, the Perth Coastal Plain, it is possible that they have some habitat preference, permitting their co-existence in the same broad region. Both the coastal plain forms are very distinct, even in gross appearance, from the eastern species and it is suggested that the Darling Range has provided the geographical barrier necessary for speciation. It is now the species boundary as no specimens have been collected in the hills from which area the author has many times collected Mygalomorphs.

Holotypes have been placed in the W.A. Museum, paratypes forwarded to the Australian Museum, Sydney.

The author is indebted to the Curator of the W.A. Museum, Mr. L. Glauert, for the opportunity of examining the specimens in the Museum collection.

LITERATURE CITED IN TEXT.

- Cambridge, O. P., 1870, Monogr. of genus *Idiops*. P.Z.S. 1870.
Poeck, R. I., 1897, On some Trapdoor Spiders of the Family Ctenizidae from South and West Australia, Contained in the Collection of the British Museum. *Ann. and Mag. Nat. Hist.* xix (6).

NOTES ON TWO WELL-KNOWN AUSTRALIAN ANT SPECIES

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The two ant species discussed below belong to the subfamily Ponerinae. Both are common in the vicinity of Perth, and *Euponera rufonigra* is here demonstrated to range far east into Victoria.

Rhytidoponera douglasi nomen novum

pro Rhytidoponera punctata var. *levior* Crawley, 1925, *Ann. Mag. Nat. Hist.*, (9) 16: 581, worker.

nec Rhytidoponera mayri r. *glabrius* var. *laevior* Stitz, 1911, *Sitzb. Ges. Naturf. Freunde, Berlin*, pp. 353-353, figs. 1, 2, worker.

In his *Rhytidoponera* revision of 1936 (*Mem. Nat. Mus., Melbourne*, no. 9, pp. 14-89, pls. 3-6), Clark treats Crawley's variety *levior* as a good species and neglects the earlier name set forth by Stitz. *R. douglasi* is a characteristic form, and Mr. Athol Douglas, entomologist at the Western Australian Museum, for whom the new name is given, informs me that it occurs not only on Rottnest